Amendments to the Specification:

The Title is to be amended as follows:

Self ~~Thr ading~~Threading Wallpaper Printer

The Paragraph beginning at Page 34, line 43, is to be amended as follows:

Figure 14A and ~~14Bare~~ 14B are perspective views of a media cartridge;

The Paragraph beginning at Page 34, lines 46, is to be amended as follows:

Figure 17A ~~and~~ to 17D are various views of the media cartridge depicted in Figures 14 -16;

The Paragraph beginning at Page 38, lines 36-40, through to Page 39, lines 1-5, is to be amended as follows:

As shown in Figure 3, the cabinet 100 is built around a frame 300. The frame 300 supports the outer panels, e.g. side panels 302, 304, a rear panel 306, upper and lower front panels ~~308 310~~308, 310 and a top panel 312. The well 106 is shown as having a support spindle 330 and a driven spindle 314. Tracing the paper flow path backward from the well 106, the path comprises a slitter and transverse cutter module ~~316~~1200, a dryer 318, a full width stationery printhead ~~320~~500, and the media cartridges with their drive mechanism 322. Ink reservoirs 324 are located above the printhead ~~320~~500. The reservoirs may have level monitors or quality control means that measure or estimate the amount of ink remaining. This quantity may be transmitted to the printer's processor where it can be used to generate a display or alarm. The processing capabilities of the device are located in a module or enclosure 340. The processor operates the unit in accordance to stored technical and business rules in conjunction with operator inputs.

The Paragraph beginning at Page 39, lines 27-34, is to be amended as follows:

Referring again to Figure 5, the printhead is supplied with liquid ink from the reservoirs 324. The removable reservoirs are located above the printhead 500 and a harness 504 comprising a number of ink supply tubes carries the 6 different ink colors from the 6 reservoirs 324 to the printhead 500. The liquid ink harness 504 is interrupted by a self sealing coupling 1002, 1004 (see Figure 11). Furthermore, by loosening thumb screws 1006 and disconnecting the ink harness coupling 1002, 1004 allows the printhead to be withdrawn from the rail 502. Also note that an air pump 1010 supplies compressed air through an air hose 1012 to the printhead or an area adjacent to it. This supply of air may be used to blow across the nozzles in order to prevent the media from resting on the nozzles.

The Paragraph beginning at Page 40, lines 16-18, is to be amended as follows:

After the dryer 318, the path continues in a generally straight line to the cutting and slitting or module ~~316~~1200. The media path then extends from the cutting and slitting module ~~316~~ 1200 through the exit opening 206 of the cabinet.

The Paragraph beginning at Page 41, lines 16-36, is to be amended as follows:

Figures 14 -18 illustrate the construction of the wallpaper media supply cartridges 400. Each cartridge comprises, for example, a high density polyethylene molding which forms a hinged case 1400. The case 1400 includes a top half 1402 and a bottom half 1404 which are held together by hinge such as an integral hinge 1406. One end face of the cartridge 400 preferably includes a handle 1408. A second folding handle 1410 may be provided, for ease of handling, along the top of the cartridge 400. The two halves, ~~1402,~~ ~~1404~~1402 and 1404, may be held together by one or more resilient clips 1414.

As shown in Figure 16, the cartridge 400 is preferably loaded by introducing an assembly into the bottom case half. The assembly includes a roll of blank media 1600 on a hollow core 1630 which rotates freely about a shaft 1610, rollers 1620, 1622 and the support moldings 1614.

The shaft 1610 carries a roller support molding 1614 at each end. ~~The~~ They may be interchangeable so as to be used at either end. A notch 1632 at each end of the shaft 1610 engages a cooperating nib 1634 on the support moldings. Because the support moldings 1614 are restrained from rotating by locator slots 1636 formed in the cases halves, the shaft does not rotate (but the core 1630 does). The roller support moldings also may include resilient extensions ~~1617~~1616. Lunettes 1638 at the end of the extensions engage cooperating grooves 1618 formed at the ends of the cartridge drive roller 1620 and idler roller 1622. The rollers 1620, 1622 are supported between the ends of the cartridge 400, but maintained in proximity to one another and in registry with the shaft 1610 by the support moldings 1614. The resilient force imposed by the extensions 1616 keep the drive roller 1620 and the idler 1622 in close enough proximity (or in contact) that when the drive roller 1620 is operated on by the media driver motor, the wallpaper medium is dispensed from the dispensing slot 1640 of the cartridge 400. Further advancing the drive roller 1620 advances the media web into the media path.

The Paragraph beginning at Page 42, lines 3-16, is to be amended as follows:

As shown in Figures 19 and 20, a tote or container 1900 for the finished product comprises an elongated folding carton with a central axially directed opening 1902 at each end ~~1902~~1904. The carton may be disposable and formed from paper, cardboard or any other thin textile. The carton holds about 50 meters of printed wallpaper. As shown in Figure 20, the finished roll of wallpaper 2000 is shown on a core 2008 supported between a pair of support moldings ~~2000-2004~~2000 and 2004. The core 2008 may be disposable. Each of the support moldings comprises a hub or stub shaft 2006 which is adapted to engage the interior of the core 2008 which carries the printed wallpaper 2000. The support moldings may have a circumferential bearing surface ~~2022~~, attached to the stub shaft, for example by spokes 2030, for distributing the load onto the interior bottom and walls of the carton. Each molding, ~~2002, 2004~~2002 and 2004 includes an external shoulder 2010 which is adapted to fit through the openings 1902. At least one of the moldings 2002 has axially or radially extending teeth 2012 forming a coupling feature which is adapted to be driven by the drive mechanism located within the cradle 106 formed on the front of the cabinet. Other types of coupling features may be used. A viewing window 2020 may be formed in an upper flap of the carton 1900 so that the printed pattern can be viewed with the lid 2022 closed.

The Paragraph beginning at Page 42, lines 21-25, is to be amended as follows:

The carton 1900 may include folding handles 1910 provided singly or in opposing pairs, ~~1910, 1912~~1910 and 1912. In some embodiments a handle is provided on either side of the gap 1922. Folding handles of this kind form a grip when deployed but do not interfere with the location of the box 1900 within the cradle. An arrow 1914 or other visual device printed on the box indicates which end of the carton orients to or corresponds to the driving end of the cradle 106 (see Figure 3).

The Paragraph beginning at Page 45, lines 5-9, is to be amended as follows:

In the assembly shown in ~~Figure 24~~Figure 24B, seven ducts 3041 are shown for transporting black, cyan, magenta and yellow coloured ink, each in one duct, infrared ink in one duct, air in one duct and fixative in one duct. Even though seven ducts are shown, a greater or lesser number may be provided to meet specific applications. For example, additional ducts might be provided for transporting black ink due to the generally higher percentage of black and white or greyscale printing applications.

The Paragraph beginning at Page 49, lines 39-40, through to Page 50, lines 1-9, is to be amended as follows:

As depicted in Figure 35A, the channel 3021 is formed by the upper wall 3027 and two, generally parallel side walls 3024a and 3029 of the support frame 3022, which are arranged as outer and inner side walls (with respect to the outward and inward directions of the printhead assembly 3010) extending along the length of the support frame 3022. The two side walls 3024a and 3029 have different heights with the taller, outer side wall 3024a being defined as the upper portion of the outer frame wall 3024 which extends above the upper wall 3027 of the support frame 3022, and the shorter, inner side wall 3029 being provided as an upward extension of the upper wall 3027 substantially parallel to the inner frame wall 3025. The outer side wall 3024a includes a recess (groove) ~~24b~~ 3024b formed along the length thereof. A bottom surface 3024c of the recess 3024b is positioned so as to be at the same height as a top surface 3029a of the inner side wall 3029 with respect to the upper wall 3027 of the channel 3021. The recess 3024b further has an upper surface 3024d which is formed as a ridge which runs along the length of the outer side wall 3024a (see Figure 35B).

The Paragraph beginning at Page 52, lines 10-23, is to be amended as follows:

Furthermore, the clipping arrangement also allows for easy assembly and disassembly of the printhead assembly by the mere "unclipping" of the PCB support(s) from the casing. In the exemplary embodiment shown in ~~Figure 36~~Figure 37A, a pair of extending arm portions 3094 is provided; however those skilled in the art will understand that a greater or lesser number is within the scope of the present invention.

Referring again to Figures 36 to ~~37C~~37B, the support 3091 further includes a channel portion 3095 in the upper portion thereof. In the exemplary embodiment illustrated, the channel portion 3095 includes three channelled recesses 3095a, 3095b and 3095c. The channelled recesses 3095a, 3095b and 3095c are provided so as to accommodate three longitudinally extending electrical conductors or busbars 3071, 3072 and 3073 ~~(see~~

~~Figure 22)~~ which form the power supply 3070 (see Figure 23) and which extend along the length of the printhead assembly 3010. The busbars 3071, 3072 and 3073 are conductors which carry the power required to operate the printhead integrated circuits 3051 and the drive electronics 3100 located on the PCB 3090 (shown in Figure 38A and described in more detail later), and may be formed of copper with gold plating, for example.

The Paragraph beginning at Page 54, lines 1-11, is to be amended as follows:

The pressure plate 3074 is shown in more detail in Figures 39A to 41. The pressure plate 3074 includes a raised portion (pressure elastomer) 3075 which is positioned on a rear surface of the pressure plate 3074 (with respect to the mounting direction on the support 3091), as shown in Figure 39B, so as to be aligned with the busbars 3071, 3072 and 3073, with the flex PCBs 3080 lying therebetween when the pressure plate 3074 is mounted on the support 3091. The pressure plate 3074 is mounted to the support 3091 by engaging holes 3074a with corresponding ones of (upper) retaining clips 3099 of the support 3091 which project from the extending arm portions 3094 (see ~~Figure 35A~~Figure 37A) and holes 3074b with the corresponding ones of the (lower) retaining clips 3096, via tab portions 3074c thereof (see Figure 40). The pressure plate 3074 is formed so as to have a spring-like resilience which urges the flex PCBs 3080 into electrical contact with the busbars 3071, 3072 and 3073 with the raised portion 3075 providing insulation between the pressure plate 3074 and the flex PCBs 3080.

The Paragraph beginning at Page 54, lines 38-40, through to Page 55, lines 1-8, is to be amended as follows:

Returning to Figure 42C, in which one of the extending arm portions 3094 is illustrated. An enlarged view of this extending arm portion 3094 is shown in Figure 42E. The extending arm portion 3094 is configured so as to be substantially L-shaped, with the foot section of the L-shape located so as to fit over the inner side wall 3029 of the channel 3021 and the longitudinally extending tab 3043 of the fluid channel member 3040 of the printhead module 3030 arranged thereon. As shown in Figure 42E, the end of the foot section of the L-shape has an arced surface. This surface corresponds to the edge of a recessed portion 3094a provided in each the extending arm portions 3094, the centre of which is positioned substantially at the line II-II in Figure 42 (see Figures 36 and ~~37C~~37B). The recessed portions 3094a are arranged so as to engage with angular lugs 3043a regularly spaced along the length of the longitudinally extending tabs 3043 of the fluid channel member 3040 (Figure 24A), so as to correspond with the placement of the printhead tiles 3050, when the extending arm portions 3094 are clipped over the fluid channel member 3040.

The Paragraph beginning at Page 55, lines 33-40, is to be amended as follows:

Further still, as also shown in Figures 42C and 42E, the (upper) lug 3092 of the support 3091 has an inner surface 3092a which is also slightly angled from the normal of the plane of the support 3091 in a direction away from the support 3091. As shown in ~~Figures 37B and 37C~~Figure 37B, the upper lugs 3092 are formed as resilient members which are able to hinge with respect to the support 3091 with a spring-like action.

Consequently, when mounted to the casing 3020, a slight force is exerted against the lug 3027a of the uppermost face 3027 of the support frame 3022 which assists in securing the support 3091 to the support frame 3022 of the casing 3020 by biasing the (lower) lug 3092 into the recess formed between the lower part of the inner surface 3025 and the lug 3028a of the arm portion 3028 of the support frame 3022.

The Paragraph beginning at Page 56, lines 11-22, is to be amended as follows:

The cover portion 3023 includes a longitudinally extending tab 3023a on a bottom surface thereof (with respect to the orientation of the printhead assembly 3010) which is received in the recessed portion 3028c formed between the lug 3028b and the curved end portion 3028d of the arm portion 3028 of the support frame 3022 (see Figure 35A). This arrangement locates and holds the cover portion 3023 in the casing 3020 with respect to the support frame 3022. The cover portion 3023 is further held in place by affixing the end plate 3111 or the end housing 3120 via the end plate 3110 on the longitudinal side thereof using screws through threaded portions 3023b (see ~~Figures 43, 49 and 59~~Figure 43). The end plates 3110 and/or ~~111~~ 3111 are also affixed to the support frame 3022 on either longitudinal side thereof using screws through threaded portions 3022a and 3022b provided in the internal cavity 3026 (see ~~Figures 35A, 49 and 59~~Figure 35A). Further, the cover portion 3023 has the profile as shown in Figure 33, in which a cavity portion 3023c is arranged at the inner surface of the cover portion 3023 (with respect to the inward direction on the printhead assembly 3010) for accommodating the pressure plate(s) 3074 mounted to the PCB support(s) ~~91~~3091.

The Paragraph beginning at Page 57, lines 23-33, is to be amended as follows:

To achieve this, the connecting members 3102 may each be formed as shown in Figure 47 to be a rectangular block having a series of conducting strips 3104 provided on each surface thereof. Alternatively, the conducting strips 3104 may be formed on only one surface of the connecting members 3102 as depicted in Figures 45 and ~~3046~~46. Such a connecting member may typically be formed of a strip of silicone rubber printed to provide sequentially spaced conductive and non-conductive material strips. A shown in Figure 47, these conducting strips 3104 are provided in a 2:1 relationship with the connecting strips 3090a and 3090b of the PCBs 3090. That is, twice as many of the conducting strips 3104 are provided than the connecting strips 3090a and 3090b, with the width of the conducting strips 3104 being less than half the width of the connecting strips 3090a and 3090b. Accordingly, any one connecting strip 3090a or ~~90b~~ 3090b may come into contact with one or both of two corresponding conducting strips 3104, thus minimising alignment requirements between the connecting members 3104 and the contacting regions of the PCBs 3090.

The Paragraph beginning at Page 58, lines 22-24, is to be amended as follows:

The manner in which the busbars are connected to the power supply and the arrangements of the end plates 3110 and ~~111~~ 3111 and the end housing(s) 3120 which house these connections will now be described with reference to Figures 21, 22 and 49 to 59.

The Paragraph beginning at Page 59, lines 18-23, is to be amended as follows:

As seen in Figures 50 and 52C, seven internal and external tube connectors 3118b and ~~118c~~ 3118c are provided in the fluid delivery connection portion 3118 in accordance with the seven internal fluid delivery tubes 3006. That is, as shown in Figure 54, the fluid delivery tubes 3006 connect between the internal tube connectors 3118b of the fluid delivery connection portion 3118 and the seven tubular portions 3047b or 3048b of the fluid delivery connector 3047 or 3048. As stated earlier, those skilled in the art clearly understand that the present invention is not limited to this number of fluid delivery tubes, etc.

The Paragraph beginning at Page 59, lines 29-40, through to Page 60, lines 1-9, is to be amended as follows:

The region 3115c of the connector arrangement 3115 is advantageously provided with connection regions (not shown) of the data connection portion 3117 which correspond to the connection strips 3090a or ~~90b~~ 3090b provided at the edge contacting region on the underside of the end PCB 3090, so that one of the connecting members 3102 can be used to connect the data connections of the data connection portion 3117 to the end PCB 3090, and thus all of the plurality of PCBs 3090 via the connecting members 3102 provided therebetween.

This is facilitated by using a support member 3112 as shown in Figure 53A, which has a raised portion 3112a and a recessed portion 3112b at one edge thereof which is arranged to align with the raised and recessed portions 3091a and 3091b, respectively, of the end PCB support 3091 (see Figure 44). The support member 3112 is attached to the rear surface of the end PCB support 3091 by engaging a tab 3112c with a slot region 3091c on the rear surface of the end PCB support 3091 (see ~~Figures 37B and 37C~~Figure 37B), and the region 3115c of the connector arrangement 3115 is retained at upper and lower side surfaces thereof by clip portions 3112d of the support member 3112 so as that the connection regions of the region 3115c are in substantially the same plane as the edge contacting regions on the underside of the end PCB 3090.

Thus, when the end plate 3110 is attached to the end of the casing 3020, an abutting arrangement is formed between the recessed portions 3112b and 3091b, similar to the abutting arrangement formed between the recessed portions 3091b of the adjacent supports 3091 of Figure 44. Accordingly, the connecting member 3102 can be accommodated compactly between the end PCB 3090 and the region 3115c of the connector arrangement 3115. This arrangement is shown in Figures 53B and ~~33C~~ 53C for another type of connector arrangement 3125 with a corresponding region 3125c, which is described in more detail below with respect to Figures 57, 58A and 58B.

The Paragraph beginning at Page 60, lines 16-24, is to be amended as follows:

Returning to Figure 50, it can be seen that the end plate 3110 is shaped so as to conform with the regions 3115b and 3115c of the connector arrangement 3115, such that these regions can project into the casing 3020 for connection to the busbars 3071, 3072 and 3073 and the end PCB 3090, and so that the busbars 3071, 3072 and 3073 can extend to contact screws 3116a, 3116b and 3116c provided on the connector arrangement 3115. This particular shape of the end plate 3110 is shown in Figure 55A, where regions ~~3110~~ 3110a and

3110b of the end plate 3110 correspond with the regions 3115b and 3115c of the connector arrangement 3115, respectively. Further, a region 3110c of the end plate 3110 is provided so as to enable connection between the internal fluid delivery tubes 3006 and the fluid delivery connectors 3047 and 3048 of the printhead module 3030.

The Paragraph beginning at Page 62, lines 29-33, is to be amended as follows:

In such a situation therefore, since it is unnecessary specifically to provide a connector arrangement at the end of the printhead module 3030 which is capped by the capping member 3049, then the end plate 3111 can be employed which serves to securely hold the support frame 3022 and cover portion 3023 of the casing 3020 together via screws secured to the threaded portions 3022a, ~~22b and 23b~~3022b and 3023b thereof, in the manner already described (see also Figure 22).

The Paragraph beginning at Page 65, lines 25-33, is to be amended as follows:

As described above, the RIP software/hardware rasterizes each page description and compresses the rasterized page image. Each compressed page image is transferred to the PEC integrated circuit 3100 where it is then stored in a memory buffer 3135. The compressed page image is then retrieved and fed to a page image expander 3136 in which page images are retrieved. If required, any dither may be applied to any contone layer by a dithering means 3137 and any black bi-level layer may be composited over the contone layer by a compositor 3138 together with any infrared tags which may be rendered by the rendering means 3139. Returning to a description of process steps, the PEC integrated circuit 3100 then drives the printhead integrated circuits 3051 to print the composited page data at step ~~140~~3140 to produce a printed page ~~141~~3141.

The Paragraph beginning at Page 67, lines 7-13, is to be amended as follows:

In order to perform the page expansion and printing process, the PEC integrated circuit 3100 includes a high-speed serial interface 3149 (such as a standard IEEE 1394 interface), a standard JPEG decoder 3150, a standard Group 4 Fax decoder 3151, a custom halftoner/compositor (HC) 3152, a custom tag encoder 3153, a line loader/formatter (LLF) ~~154~~3154, and a printhead interface 3155 (PHI) which communicates with the printhead integrated circuits 3051. The decoders 3150 and 3151 and the tag encoder 3153 are buffered to the HC 3152. The tag encoder 3153 establishes an infrared tag(s) to a page according to protocols dependent on what uses might be made of the page.

The Paragraph beginning at Page 67, lines 35-40, through to Page 68, lines 1-2, is to be amended as follows:

The HC 3152 combines the functions of halftoning the contone (typically CMYK) layer to a bi-level version of the same, and compositing the spot1 bi-level layer over the appropriate halftoned contone layer(s). If there is no K ink, the HC 3152 is able to map K to CMY dots as appropriate. It also selects between two dither matrices on a pixel-by-pixel basis, based on the corresponding value in the dither matrix select map. The input to the HC 3152 is an expanded contone layer (from the JPEG decoder ~~146~~3150) through a buffer 3158, an expanded bi-level spot1 layer through a buffer 3159, an expanded dither-matrix-select bitmap at typically

the same resolution as the contone layer through a buffer 3160, and tag data at full dot resolution through a buffer (FIFO) 3161.

The Paragraph beginning at Page 69, lines 22-29, is to be amended as follows:

Each of the channels 3531 carries a different respective colour or type of ink, or fluid, except for the last channel, designated with the reference numeral 3532. The last channel 3532 is an air channel and is aligned with further holes 3522 of the middle layer 3520, which in turn are aligned with further holes 3513 of the upper llayer 3510. The further holes 3513 are aligned with inner sides 3541 of slots 3542 formed in the channel layer 3540, so that these inner sides 3541 are aligned with, and therefore in fluid-flow communication with, the air channel 3532, as indicated by the dashed line ~~30543~~3543.

The lower layer 3530 includes the inlet ports 3054 of the printhead tile 3050, with each opening into the corresponding ones of the channels 3531 and ~~532~~3532.

The Paragraph beginning at Page 71, lines 23-35, is to be amended as follows:

A passivation layer in the form of a layer of silicon nitride ~~831~~ 3831 is positioned over the aluminium contact layers 3830 and the silicon dioxide layer 3817. Each portion of the passivation layer 3831 positioned over the contact layers 3830 has an opening 3832 defined therein to provide access to the contacts 3830.

The nozzle arrangement 3801 includes a nozzle chamber 3829 defined by an annular nozzle wall 3833, which terminates at an upper end in a nozzle roof ~~3834~~ and a radially inner nozzle rim 3804 that is circular in plan. The ink inlet channel 3814 is in fluid communication with the nozzle chamber 3829. At a lower end of the nozzle wall, there is disposed a movable rim 3810, that includes a movable seal lip 3840. An encircling wall 3838 surrounds the movable nozzle, and includes a stationary seal lip 3839 that, when the nozzle is at rest as shown in Figure 65, is adjacent the moving rim 3810. A fluidic seal 3811 is formed due to the surface tension of ink trapped between the stationary seal lip 3839 and the moving seal lip 3840. This prevents leakage of ink from the chamber whilst providing a low resistance coupling between the encircling wall 3838 and the nozzle wall 3833.

The Paragraph beginning at Page 72, lines 17-19, is to be amended as follows:

In use, the device at rest is filled with ink 3813 that defines a meniscus ~~803~~ 3803 under the influence of surface tension. The ink is retained in the chamber 3829 by the meniscus, and will not generally leak out in the absence of some other physical influence.

The Paragraph beginning at Page 72, lines 31-35, is to be amended as follows:

The downward movement (and slight rotation) of the lever arm 3818 is amplified by the distance of the nozzle wall 3833 from the passive beams 3806. The downward movement of the nozzle walls and roof causes a pressure increase within the chamber ~~30293~~3829, causing the meniscus to bulge as shown in Figure 66. It will be noted that the surface tension of the ink means the fluid seal ~~3011~~ 3811 is stretched by this motion without allowing ink to leak out.

The Paragraph beginning at Page 73, lines 7-14, is to be amended as follows:

As best shown in Figure 68, the nozzle arrangement also incorporates a test mechanism that can be used both post-manufacture and periodically after the printhead assembly is installed. The test mechanism includes a pair of contacts 3820 that are connected to test circuitry (not shown). A bridging contact 3819 is provided on a finger ~~3843~~ that extends from the lever arm 3818. Because the bridging contact 3819 is on the opposite side of the passive beams 3806, actuation of the nozzle causes the priding contact to move upwardly, into contact with the contacts 3820. Test circuitry can be used to confirm that actuation causes this closing of the circuit formed by the contacts 3819 and ~~8203~~3820. If the circuit is closed appropriately, it can generally be assumed that the nozzle is operative.